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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,788

09/23/2004

Nobuyuki Masumura

2004\_1509A

3936

513 7590 11/18/2008

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SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

PILKINGTON, JAMES

ART UNIT

PAPER NUMBER

3656

MAIL DATE

DELIVERY MODE

11/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/508,788	<b>Applicant(s)</b> MASUMURA ET AL.	
	<b>Examiner</b> JAMES PILKINGTON	<b>Art Unit</b> 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-26 and 34-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26 and 34-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the core/sheath fiber (clm 45) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17-26 and 34-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites "a tensile strength substantially higher." The phrase "substantially higher" renders the claim indefinite since the range of values which would be considered "substantially higher" is not understood in the claim nor the specification provide the information needed for one of ordinary skill in the art to understand the range of values being covered.

Claims 44, 46, 47, 48 and 50 recite the limitation "said tape" in lines 2 or 3. There is insufficient antecedent basis for this limitation in the claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17-26, 34-43 and 49-51, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al, EP 1083347 A2 (published March 14, 2001) in view of Askeland (copyright 1994) in view of Kavesh, USP 4,536,536.

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Matsumoto discloses a belt for a ball chain comprising;

- a tape (21, Figure 7 and 8) of synthetic resin (C2/L52-53)
- extending along longitudinal edges and integral with the tape a stretched fibrous member (23, C7/L38-55) of thermoplastic resin (Matsumoto discloses synthetic resin C7/L38-55) that are positioned inwardly of the corresponding edge (Figure 8 shows that stretched member 23 is inward of the edge of the belt)
- ball inseting holes (20) spaced at equal intervals along a straight line (spaced apart by projections 22) between the longitudinal edges
- projections (22) disposed around the holes
- both resins are substantially identical resins by virtue of comprising principal components of identical resins (both resins can have carbon)

Matsumoto does not disclose that the fibers are oriented longitudinally along said stretched fibrous member.

Askeland teaches that orienting fibers/molecular chains (a fiber is made of a molecular chain) in a direction parallel to the force being applied, which is the longitudinal direction, to the belt body provides a greater tensile strength (pages 540-543, in particular Figure 16-12).

It would have been obvious to one of ordinary skill in the art to use fibers/molecular chains oriented in a direction longitudinal along the stretched fibrous member in Matsumoto to increase the tensile strength of the overall device as taught by

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Askeland. Using a known technique to improve the tensile strength of Matsumoto would have been obvious to one of ordinary skill.

Matsumoto in view of Askeland as applied above does not disclose that the stretched fibrous member is obtained by stretching a yet-unstretched fibrous member to obtain a substantially higher tensile strength.

Kavesh teaches that it is known to stretch a yet-unstretched fibrous member to obtain a member with greater tensile strength, modulus, toughness, dimensional and hydrolytic stability and high resistance to creep under sustained loads (C2/L60-63). Application of these stretched fibers is also disclosed to be reinforcements in thermoplastics, thermosetting resins and power transmission belts (C3/L15-20).

Using a stretched fibrous member obtained from stretching a yet-unstretched member would have been obvious to one of ordinary skill in the art since using a known technique to improve a similar device in the same way is obvious.

6. Claims 44, 45 and 48, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al, EP 1083347 A2 (published March 14, 2001) in view of Askeland (copyright 1994) in view of Kavesh, USP 4,536,536 and further in view of Kanai, USP 5,852,135.

Matsumoto in view of Askeland and Kavesh discloses all of the claimed subject matter above.

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Matsumoto in view of Askeland and Kavesh does not disclose that the fibrous member and the belt comprise a polyester elastomer nor that the fibrous member has a core/sheath structure.

Kanai teaches a core/sheath arrangement of thermoplastic resins in a core/sheath manner with an inner and outer elastomer (C8/L19-43) wherein the elastomers used in the system are polyester elastomers (C6/L13-35) for the purpose of improve weld strength and elongation and/or impact resistance of the resin being used (C3/L5-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Matsumoto in view of Askeland and Kavesh and provide the fibrous member and the belt with a polyester elastomer and fibers with a core/sheath structure, as taught by Kanai, for the purpose of improve weld strength and elongation and/or impact resistance of the resin.

7. Claim 46, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al, EP 1083347 A2 (published March 14, 2001) in view of Askeland (copyright 1994) in view of Kavesh, USP 4,536,536 and further in view of Kojima, USP 6,103,805.

Matsumoto in view of Askeland and Kavesh discloses all of the claimed subject matter above.

Matsumoto in view of Askeland and Kavesh does not disclose that the belt and fibers are made of 6/66 copolymer nylon.

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Kojima teaches making a resin out of a nylon 6 copolymer, one of which is nylon 6/66 (C2/L53), for the purpose of improve weld strength, flexural modulus and heat resistance (C1/L57-62).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Matsumoto in view of Askeland and Kavesh and provide the fibrous member and the belt to be made with a 6/66 copolymer nylon, as taught by Kojima, for the purpose of improving weld strength, flexural modulus and heat resistance.

8. Claim 47, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al, EP 1083347 A2 (published March 14, 2001) in view of Askeland (copyright 1994) in view of Kavesh, USP 4,536,536 and further in view of Kitamura, USP 6,610,766.

Matsumoto in view of Askeland and Kavesh discloses all of the claimed subject matter above.

Matsumoto in view of Askeland and Kavesh does not disclose that the belt and fibers are made of polyvinylidene fluoride.

Kitamura teaches making a resin out of a polyvinylidene fluoride resin (see whole document) for the purpose of providing a belt or transfer member which is semiconductive (can transfer electric charge (C6/L15-19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Matsumoto in view of Askeland and Kavesh and provide



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the fibrous member and the belt to be made with a polyvinylidene fluoride resin, as taught by Kitamura, for the purpose of providing a belt or transfer member which is semiconductive in nature.

### ***Double Patenting***

9. Claim 48 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 44. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Response to Arguments***

10. Applicant's arguments filed 10/27/08 have been fully considered but they are not persuasive.

11. The Applicant argues that Matsumoto, Askeland and Kavesh do not disclose molecular changes orientated in the same direction.

Askeland discloses a fiber which is a molecular chain as broadly defined since a fiber is an elongated or stretched member and a fiber, at its root structure, is made of molecular chains that can only extend generally in the elongated direction of the fiber. Furthermore, stretching of the fibers, as taught by Kavesh, would act to lengthen the fiber which would in turn act to straighten/stretch the molecular chains of the fibers, thus further orientating the fibers in the same length direction.

12. The Applicant further argues that the resins are substantially identical, “but with differing molecular chain states” and argues that the results were unexpected.

First, the phrase “but with differing molecular chain states” does not appear in the claims. Second, the Applicant is not claiming any of the materials used in Example 11 in the independent claim nor does the specification address what the expected result was and why the greater tensile strength was unexpected.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES PILKINGTON/  
Examiner, Art Unit 3656  
11/17/08

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3656